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IS THE PROFESSION OVERCROWDED?

Probably some members have not yet considered the bearing of "the present shortage of veterinary surgeons" upon the action of the Council with regard to our matriculation examination. Very recently the Council definitely refused to raise our matriculation standard to that now adopted by the medical profession, on the ground that to do so would reduce the number of new students. The decision was not wholly approved: some men thought the present supply of students more than sufficient for the needs of the profession. But the events of the last few weeks tend indirectly to justify the Council's view.

The war has undoubtedly caused a shortage of veterinary surgeons in private practice. Some practitioners have joined the colours as temporary veterinary officers. A larger number, who were attached to the Territorial or Reserve Forces, have been called away from their practices: and many private practitioners have been largely employed in horse-buying, and have had little time for their ordinary work. The net result is that for ordinary general practice there is an insufficiency of reliable men—and especially of young ones. But the call which the war has made upon veterinary surgeons, serious as it is for a small profession, is not enormous; and the shortage it has caused points a moral—that the profession, if, indeed, it is overcrowded at all, is not nearly so much so as some suppose.

A sudden national emergency has temporarily rendered the supply of veterinary surgeons for ordinary practice unequal to the demand. A marked reduction in the supply of new students would ultimately have a somewhat similar effect—an effect less perceptible than the present one, because more gradual, but none the less a serious one both for the profession and the public. And this second effect would not be a very temporary one.

Veterinary practice is less lucrative than it used to be; but several causes have combined to make it so, and we do not think that over-crowding is one of them. Of late years, under ordinary peace conditions there has been plenty of room in it for men to make moderate incomes—that is, for rank and file members. The number of new members is declining, while every year the proportion of them entering the public services is increasing. It seems possible that before long the number of young members entering private practice may begin appreciably to fall rather short of public requirements.

OSMOTIC TREATMENT.

Bouchet reports (*Bulletin de la Soc. Centrale de Méd. Vét.*) the successful use upon five horses of the osmotic method of treatment introduced into human surgery by Dr. Carnot. All five horses showed considerable swelling of one limb, without any perceptible wound or abrasion of the skin. In every case, œdema of the limb had previously appeared at different times—sometimes acute, and sometimes the consequence of lymphatism or an obscure diathesis.

In the first horse Bouchet treated, a hind limb was swollen. Bouchet enveloped the limb in a thick bandage, which was kept permanently soaked with a cold saturated salt solution. The fetlock joint, the middle of the metatarsus, and the hock joint were then measured daily; and the measurements showed that the œdema decreased from the fourth day onwards. The salt solution, however, affected the skin of the fetlock region, so that the treatment had to be discontinued.

In the cases of two other horses, Bouchet used a daily dressing of pure water-free glycerine. Every morning he vigorously rubbed the glycerine against the hair into the skin, and then placed a bandage round the leg merely to protect it from dirt. Measurements of the limb at the same places as in the first case showed that the swelling decreased from the third day forwards, and that the œdema had completely disappeared on the ninth day.

Bouchet treated two other horses with a mixture of glycerine and one third of saturated salt solution. This showed a quicker and more energetic effect than that of glycerine alone. In six days the swollen limbs had again become quite normal; and the skin was not affected as in the first case.

Since treating these cases, Bouchet has adopted the following in dealing with any horse which shows œdematous swelling of a limb. If he finds the lesion which has caused the œdema, he treats the horse with osmotic dressings, in addition to exercise and massage. But if the cause of the œdema is undiscoverable, he first washes the affected limb from above down to the hoof with lukewarm creolin solution, so as to disinfect any small invisible wounds that are present, and then employs osmotic dressings. If this method is adopted at the very beginning of the affection, it is very successful against many cases of œdema and lymphangitis, which otherwise might easily have led to an obstinate elephantiasis.—(*Berliner Tier. Woch.*)

The Preservation of Tincture of Iodine.

A. Vandermeulen, a pharmacist, has published (*Pharmazeutische Zentralhalle*) an article upon this subject. It is known that tincture of iodine prepared according to the pharmacopœia alters rapidly. It soon and progressively forms hydro-iodic acid, which is a very caustic product.

Johannessen has performed a series of experiments in order to fix the quantities of this acid produced after given periods of time. He introduced freshly prepared 10 per cent. tincture of iodine into brown emery-stoppered flasks, which he exposed to a temperature of about 20° C., and chemically tested the solutions after the expiration of certain periods. He found that, after forty days, the tincture had lost about ten per cent. of free iodine. The hydro-iodic acid which had formed after the same time fell only very slightly short indeed of the iodine which had been lost.

Johannessen then experimented to determine in what conditions it is possible to arrest the formation of hydro-iodic acid and preserve the tincture by the addition of other substances. He tried three substances for this purpose, viz., sodium chloride, potassium iodide, and borax. He added these agents to quantities of fresh and tested tincture of iodine in emery-stoppered bottles, and preserved these bottles (with controls containing pure tincture of iodine, at 37° C.) In about a fortnight, he examined all the specimens. The pure tincture of iodine had been markedly transformed, that which contained sodium chloride less so, while that which contained borax had altered most of all. On the other hand, the tincture containing potassium iodide had not undergone any transformation.

Johannessen also found that the temperature exercised an influence upon the alteration of the tincture. The higher the temperature, the quicker and more profound was the alteration.

Johannessen therefore advises that about five per cent. of potassium iodide should be added to fresh tincture of iodine, with a view to preventing the formation of the objectionable hydro-iodic acid. —(*Annales de Méd. Vét.*)

A Case of Hæmophilia in the Dog.

L. and E. Lépinay record (*Revue de Pathologie Comparée*) this case. Hæmophilia has rarely been demonstrated in the dog, but perhaps its possibility may have been insufficiently considered, and it may thus have occurred unrecognised. The present case is, unfortunately, very incomplete; for the dog died before hæmotological examinations had been made, However, the authors think that the clinical symptoms were sufficient to justify the diagnosis of hæmophilia.

The subject was a German sheep dog, of medium size, and about fifteen months old at the time of the first symptoms. There was no information regarding his hereditary antecedents, His individual history was that, at the age of six months, he had shown symptoms indicating a gastro-intestinal infection. He had recovered from this very quickly, and had since thriven well and developed normally; and, though he was constantly in contact with dogs affected with distemper, he had not been infected.

At about the age of fifteen months, the dog was attacked by hæmorrhages from the gums, which arose spontaneously at the region of the necks of the teeth. Despite applications of the ordinary hæmostatic liquids (very warm water, peroxide of of hydrogen, and others) the hæmorrhages did not cease, but continued for three or four days. They diminished gradually, and then disappeared, only to reappear anew a few days later. They recurred seven or eight times in two months.

At the age of seventeen months, the dog showed a large ecchymosis of the thoraco-axillary region. This was undoubtedly spontaneous, for it was impossible to find traces of any blow. The ecchymosis was about six inches long by three inches wide. It disappeared in a fortnight, and the skin passed through all the colours usually accompanying the resorption of hæmatomata.

The authors now suspected hæmophilia, and were preparing to establish the diagnosis by examinations of the blood, when violent intestinal hæmorrhages appeared, and the dog died in four hours. He showed all the symptoms of abundant hæmorrhage—pallor of the mucous membranes, coldness of the extremities, faintness, hypothermia, and acceleration and smallness of the pulse. He continually expelled blood, literally inundating the place in which he was. The blood had no odour; and although, at the beginning of the attack it was mixed with liquid fæces, it was soon discharged absolutely pure. These symptoms certainly suggested the possibility of infectious hæmorrhagic enteritis; but the characteristic fetid odour of the fæces, and the bilious and sometimes fæcaloid vomiting, were not present. The dog showed some tendency to emesis, but this was only slight.

Symptomatic treatment was applied - repeated rectal injections of water at 122° F.. hypodermic injections of physiological serum with adrenalin added, and hypodermic injections of ergotin. These had no effect at all upon the hæmorrhage, and the dog died as stated.

In recording the case as one of hæmophilia, the authors base their diagnosis on the three symptoms which were presented, viz., repeated bleeding from the gums, ecchymosis, and violent intestinal hæmorrhage which was refractory to all treatment. —(*Annales de Méd. Vét.*)

W. R. C.

Absorption of Salicylic Acid Through the Skin.—The author confirms the statement of Bourget, that free salicylic acid is readily absorbed, and in considerable quantity, when applied to the skin in the form of plasters or ointments. It is quite possible that sufficient may be thus absorbed, under certain circumstances, to occasion toxic symptoms. The use of such applications containing a high percentage of free salicylic acid should not therefore be allowed. The same danger does not occur with the salicylates.—J. T. Lenartowicz (*Dermatol, Woch*, 1914, 791; *Apoth. Zeit.*, 1914, 29, 631).

Avian Tuberculosis and its Diagnosis by the Intradermal Tuberculin Test.

The North Dakota Agricultural Experiment Station has published a bulletin (Bulletin No. 108, Agricultural College, N.D., April, 1914), upon avian tuberculosis, written by L. van Es and A. F. Schalk, two of the veterinarians attached to the station. The bulletin numbers 94 pages, inclusive of a comprehensive bibliography, and deals with the disease from almost every point of view—history, distribution, economic importance, etiology, methods of transmission, lesions, diagnosis, prognosis, prophylaxis, and relationship to the mammalian disease. It is an excellent *resumé* of the subject for the educated agriculturist, and contains many points of interest to the comparative pathologist; but by far its most important feature is its account of the successful use by the authors of the intradermal tuberculin test.

Many observers have already unsuccessfully attempted to diagnose avian tuberculosis by the tuberculin test, using the subcutaneous, ophthalmic, and cutaneous methods. The authors give a *resumé* of these attempts, the failure of which led them to experiment almost exclusively with the intradermal method. Some tests they performed with the *ophthalmic* showed that it gave no results whatever with undoubtedly tuberculous fowls. In their intradermal tests, they used *avian* tuberculin, as a few tests made with *bovine* tuberculin gave results inferior to those of the avian preparation. What follows, therefore, relates the tests performed with tuberculin prepared in the customary manner from an avian bacillus, and applied in a 50 per cent. solution.

As places of injection the comb and one of the wattles were chosen. The technique of the injection is important and delicate. A small needle is required; and it is also advantageous to use a syringe of very small calibre, which renders it possible to exert a greater pressure and thereby secure a greater infusion of tuberculin into the tissues. It is important that the injection should be made quite near the surface, and in such a manner that the tuberculin is chiefly deposited along the stratum Malpighi. Tuberculin injected into the deeper layers of the skin of comb or wattles is lost and even in diseased birds will not cause a reaction. On the other hand, if the injection is made too superficially, there is danger of bursting through the epithelium.

The needle is carefully inserted in the layer indicated, and the plunger of the full syringe is slowly pressed in. When the needle is not correctly placed, there will be little or no difficulty in pressing the plunger in. When it *is* correctly placed, considerable pressure is often required to force the tuberculin into the tissues. The authors regard the injection as best performed when, if considerable pressure is exerted upon the syringe plunger, the tuberculin but slowly diffuses into the tissues surrounding the needle point, which may often be plainly seen by an increasing white or yellowish area gradually replacing the usual red colour of the parts. They have not attempted to regulate the dose, as they find that, in a properly made injection, the amount is automatically limited by the resistance of the tissues—about so much can be used and no more. The amount used per fowl will vary from 1-30 c.c. to 1-20 c.c.

The authors' practice is to observe reactions twenty-four, forty-eight, and seventy-two hours after injections. If reactions are obtained, they correspond to those seen in the intradermal test in mammals and consist of a local swelling of the part injected. As in mammals, they vary greatly in intensity. At first the authors encountered quite a number of cases which showed swellings, but not of sufficient size to warrant regarding them as actual reactions. Afterwards, when some skill in injecting was acquired, these doubtful reactions became fewer. The reaction varies from this small indefinite swelling to a quite voluminous enlargement of the parts injected.

The reaction swelling is not accompanied by hyperæmia. In fact, the red colour of comb or wattle usually makes way for a lighter colour under the effect of the reaction. In the central portion of the swelling, the parts are commonly of a pale yellowish colour, while surrounding this the colour is commonly of a dirty red, occasionally with a greenish tinge. This is especially seen in certain comb reactions, while in wattle reactions there seems to be more of a tendency towards a soft œdematous swelling, marked by a diffuse discolouration and ranging from dirty pale yellow to a dirty greenish tinge.

Wattle reactions are more constant than comb reactions, probably because their looser texture permits of a more pronounced swelling than does the denser tissue of the comb. Although the authors have injected comb and wattle simultaneously, they now think that an injection into one wattle, using the other as a check, is sufficient for all practical purposes.

In nearly all the authors' cases, the reactions seemed to be most pronounced and clear about forty-eight hours after injection. Most of them were reduced in size on the following day, and on the fifth day after injection they had usually completely disappeared. The authors could discover no general disturbance of the birds during the reactions.

The authors have no data on the manner of reaction to a second injection after reaction from a first. They only retested two reacting fowls, both of which reacted to a second test made about thirty days after the first.

Altogether the authors made 601 tests, but they only obtained post-mortem examinations in 277 cases. These 277 cases resulted as follows. Ninety fowls gave typical reactions, and all but two showed tuberculous lesions post-mortem. One of these two, though showing no lesions, yet contained numerous free tubercle bacilli in the liver and spleen. There were 130 non-reactors, 10 of which showed lesions. The doubtful reactions numbered 57, of which 27 showed lesions. The authors point out that errors with non-reactors and difficulties with doubtful reactions grew much fewer as their experience increased, and attribute them largely to faulty technique at first.

While admitting that more work on the subject is required, and emphasising the fact that the test requires a certain amount of skill and experience, the authors feel justified in recommending it for further trial. As an illustration of what may already be accomplished with it, they relate the following experience.

In the beginning of 1913 a flock of 249 fowls was found by tuberculin test and autopsy to be tuberculous to the extent of 43·37 per cent. Eliminating all reacting and undesirable birds, 56 non-reacting fowls were retained, to which were added 47 new purchases which did not react to the test, making a total of 103 fowls. During the summer one bird died with tuberculosis, and must be regarded as a case which failed to react on account of very extensive lesions. Some more birds died of other causes (heat, hæmorrhages, etc.) before the next test could be made.

The last test was made one year after the previous one. In the meantime the flock had again increased to 249 fowls, and the test revealed only 2·41 per cent. of tuberculosis. All these cases showed very slight lesions, probably insipient, and may be attributed to infection by the missed case which died during the summer.

NEW RESEARCHES ABOUT ROARING IN HORSES.*

By Dr. H. A. VERMEULEN, Utrecht.

These researches have given me the conviction that :

(*a*) In the horse the thyroid gland can be involved in the process of illness, of which the paralysis of the larynx on the left side is the most obvious symptom.

(*b*) The nervous disease which causes the laryngeal hemiplegia in the horse, should it ever be primarily peripheral, does not remain so, but in chronic cases central alterations may be indicated.

(*c*) The above-mentioned nervous disease is not limited to the left recurrent nerve but is a proceeding process which attacks the whole motor system.

It is generally known that there are bacterial and chemical toxic substances which attack the nervous system ; of these canine madness, lockjaw, diphtheria in man, strychnine and lead are examples, to which many others may be added. It has also been known for a long time past that bacterial and chemical toxic substances may bring about symptoms of degeneration in the left recurrent nerve of the horse, which is followed by paralysis of the larynx on that side. Every veterinary surgeon has experienced that roaring may occur after strangles, and after infectious pleuro-pneumonia, and in the course of saturnism (chronic lead poisoning).

It is about twenty-five years ago that the first researches concerning the influence of the extirpations of the thyroid gland on the nervous system were published. In 1888 Albertoni and Tizzoni found symptoms of degeneration in the peripheral nervous system, after thyroidectomy ; later also central alterations have been indicated in such cases by Rogowitch and Stieda. Waller had seen in 1910 that the process of degeneration and regeneration in bruised nerves has a slower progress in thyroprive rabbits than in normal ones. I have found that in the horse also symptoms of degeneration in peripheral nerves arise after extirpation of the thyroid gland. In my preparations an increase of connective tissue and a winding course of the axones are distinctly perceptible.

In the first place we may conclude that in the horse also the thyroid gland has a physiological influence on nervous organisms.

In the second place I would call attention to the fact that a long time ago in human pathology it was observed that a disturbance of the function of the thyroid gland often remains after certain infectious diseases, and afterwards that alterations in the histological contraction of that organ may be found in people who have died of quite different diseases. Roger and Garnier have produced the condition in mammals experimentally, *especially after infection with streptococci ; they have found exteme alterations of the microscopic construction of the thyroid gland.* De Quervain and Sarbach observed total degeneration of the thyroid parenchyma in people who had died of infectious diseases and certain forms of pneumonia. The symptoms which may be seen in the microscopic preparations of such thyroid glands are :—

(*a*) Proliferation and desquamation of the epithelium which lines the follicles.

(*b*) Alteration of the colloid substance and decrease of it. Only in chronic tuberculosis of man an increase of connective tissue may be seen. The same I have found in the cow.

I have seen similar symptoms as de Quervain and others have observed in man in thyroid glands of several kinds of animals ;‡ in a cow which had died of septic metritis, in another with chronic tuberculosis, in dogs which had had distemper, and also in horses which had suffered from strangles (streptococcic infection) or from infectious pleuro-pneumonia. With respect to the latter I observe that these are the very diseases which often are followed by roaring. Finally, I have examined the thyroid glands of twenty-one horses in which the hemiatrophy of the muscles of the larynx on the left side was to be seen in different degrees of development ; as for the rest they seemed quite normal. Of three horses the thyroid glands were cystically degenerated ; of the others the follicles were for the greater part small ; the quantity and also the quality of the colloid substance were frequently altered : the epithelium showed all the symptoms of degeneration—in many of them it had even disappeared in several spots ; and the wall of the follicles consisted partly or entirely of connective tissue.

As for the second question, former examiners, Fleming, Thomassen, Günther, jun., and others, have published that in horses with laryngeal hemiplegia, symptoms of degeneration can only be indicated in peripheral branches of the vagus ; Thomassen especially has energetically asserted that the nervous disease which causes roaring in the horse arises from a peripheral degeneration of the recurrent nerve *which never proceeds in a central direction.* In two cases of chronic laryngeal hemiplegia in the horse I have found a very distinct lesion in the posterior third part of the nucleus ambiguous on the left side from which the left recurrent nerve takes its origin. In one case I found that the quantity of cells of the dorsal motor nucleus of the vagus was considerably less than in normal preparations. If in the latter, in preparations in which the nucleus has reached its largest size, 90 to 100 cells in each of them are found ; in the former, in corresponding preparations 60 to 70 cells may be counted.

In the third place I put the principal question : Are only vagal branches attacked by the nervous disease which causes the laryngeal paralysis on the left side in the horse ? It must be affirmed that there only has the process of degeneration got such a considerable extension that up to now clinical symptoms only from this side are observed. Nevertheless, I will remark that in very chronic cases clinical symptoms from other sides may often be seen. Several times I have observed in horses which had roared for a long time slight symptoms of paresis of the left facial nerve, sometimes of the left oculomotor nerve, even in one case of both, and at the same time of the abducent nerve on that side. A few weeks before its death I had occasion to see the famous Oldenburgian stallion Roland, which had roared for at least fifteen years. The horse was suffering from a very complicated general disease of the motor system which had not only extended in the cerebral part, but also in the spinal part of the nervous system. Once I prepared the masticatory muscles on both sides of a roarer ; on the left side these muscles were distinctly less developed than on the right. The horse had an irreproachable set of teeth. I mention this because illnesses of the teeth in old horses often occur and these may be the causes of an atrophy of the masticatory muscles on one or on both sides. Microscopical studies have taught me that in cases of chronic laryngeal hemiplegia in the horse symptoms of degeneration may be found in most bulbar motor nuclei and also in different peripheral nerves. I hope to get a chance to demonstrate this at the Congress with projections made after my preparations.

* Presented at the Tenth International Veterinary Congress, London, 1914.

‡ On examination of a guinea-pig which had died recently in the laboratory of Prof. de Jong, from a streptococci infection, I found the thyroid gland totally destroyed.

In my opinion, the paralysis of the left side of the larynx in the horse must be considered the most obvious symptom of an extensive nervous disease which attacks motor nerves and their centres. This nervous disease is an intoxication, in a few cases caused by mineral or vegetable venomous substances, generally by toxic substances produced by bacteria or by auto-toxins; the latter get into the circulation of the blood by an insufficient function of the thyroid gland. The fact that among our domestic animals this disease is only found in the horse may be explained by the following circumstances:—

(*a*) This animal can suffer from infectious diseases which never occur in other animals (strangles, infectious pleuro-pneumonia).

(*b*) The specific bacteria attack at the same time the parenchyma of the thyroid gland, causing considerable destruction.

(*c*) In the horse, products of metabolism have other characters than in other animals.

(*d*) In the horse the thyroid gland is often in less favourable conditions than in other animals, as is more elaborately shown by my paper, "Das Kehlkopfpfeifen beim Pferd," A. Oosthoek, Utrecht, 1914.

The reason that toxic substances exercise ther noxious influence in the highest degree on the larynx may be explained by the fact that the muscles of this organ, except one (musculus crico-thyroideus) receive their motor nerve-supply from one nerve only, the recurrent vagal nerve. Physiological and anatomical reasons why only on the left side the consequences of this nervous degeneration are so distinctly observed are easily found. The muscles on the left side of the larynx lose their electrical irritability sooner than the right; if we prepare them accurately on the two sides and we compare them, we often may observe a difference in the development which is always to the disadvantage of the left side. In horses the arterial system of the left side of the neck is also frequently distinctly less developed than on the right. In many cases the thyroid gland in the horse gets its blood from one artery only. Such physiological and anatomical relations may be hereditary; and apart from practical grounds which plead for the possibility of this disease being hereditary, and which are also mentioned in my above-named paper, it is on these considerations that I consider the laryngeal hemiplegia in the horse to be possibly hereditary. Moreover, we must not forget that the left recurrent nerve really makes a longer and a more difficult circuit than the right one, because the left takes its retrograde way around the aorta, while the right turns around the costo-cervical artery.

Report of the Veterinary Bacteriologist, Southern Rhodesia, for the Year 1913.

During the eight months of the present year the Government Veterinary Bacteriologist was absent on vacation leave. A special extension of two months enabled him to study in Great Britain the recent advances in veterinary science. In his absence no special research work was performed, but the examination of smears and the inoculation of imported stock was undertaken by District Veterinary Surgeon Williams.

Examination of Preparations.—The number of smears submitted for diagnosis did not exceed that of the previous year, but in view of the increase of the veterinary staff, and the greater appreciation on the part of the public of this aid to diagnosis, this must be regarded as evidence of a decrease of animal sickness throughout the Territory.

African Coast Fever.—Several outbreaks have occurred during the year, many of them offering very puzzling features. In more than one instance a single case has cropped up, generally in a young animal; or an outbreak has recurred on an old infected area, which, according to the accepted theories held concerning the disease, should long since have been clean. These, in the light of our present knowledge, are hard to explain, and suggest that the ætiology of the disease is not yet fully understood. Several explanations are offered; one, that an endemic form of the disease, akin to that known as amakebe in Uganda, and described by Bruce, exists in this country; another, that recovered or "salted" cattle serve as a reservoir of infection. The question is one of considerable importance, and requires early and exact investigation.

Plasmoses of Cattle.—During the year the increasing importance of anaplasmosis has been remarkable. The mortality caused by this disease in young improved stock and in cattle from overseas, and the loss in growth and development directly or indirectly attributable to it, render it one of the greatest handicaps to stock raising in this country. The monetary losses due to it are enormous, and, with the breeding up and so-called improvement of indigenous stock, will increase from year to year; for it must be pointed out that, while the indigenous cattle of the country enjoy a marked resistance or tolerance, this is considerably reduced in their progeny when imported bulls are mated with them. So with every strain of improved blood imposed, the greater is the susceptibility and the higher the mortality of the young stock. Anaplasmosis is closely associated with the piroplasmosis of redwater, but while the former is comparatively well understood and can be eradicated by dipping, or treated with a specific remedy in the form of trypan-blue, very little is known about anaplasmosis, which has up to the present resisted all forms of treatment. It is felt that every effort should be made to obtain as soon as possible a thorough scientific knowledge of the subject, in anticipation of the improvement and progress in stock raising which the present activity would indicate. During the year 94 cattle from Great Britain were inoculated by D.V.S. Williams, with a mortality of 27. The greatest number of deaths occurred in one consignment, 16 out of 33 dying between the 35th and 40th days after inoculation. All these animals had been inoculated with the blood of a standard bleeder bull, which had previously yielded a comparatively mild virus. On testing this blood, it was found that, in addition to containing piroplasms and anaplasms as hitherto, it contained also spirochætes, which complicated the anaplasmosis re-action. This new element in the virus suggests that the bull must have contracted a natural infection, probably from tick-infected bedding. No losses have occurred during the inoculation of cattle from the southern territories, but the standard of these animals is much inferior to those from overseas, and in many cases does not justify their use for stud purposes. An effort is now being made to elaborate a new standard virus of low virulence, and until this can be done the importation of pedigree cattle from overseas is fraught with serious dangers, and is a hazardous and unprofitable proceeding. It is hoped to obtain such a virus or vaccine that the stockowner himself may inoculate his own animals and may immunise his young stock without any serious mortality.

Horse-sickness.—During the first few months of the year interesting experiments were performed in connection with the process of immunising horses against horse-sickness. The results were at the time considered highly satisfactory, such an immunity being conferred as to render the horses resistant to enormous doses of a certain virus. Unfortunately, on the completion of

these experiments, these animals had to be sold by public auction on the open market, with the result that many of them fell into the hands of careless owners who took little or no care of them, and exposed them by night and by day to the risk of infection. Many of these animals cannot be traced, but it is certain that quite a number of them died of horse-sickness. On the other hand, some half-dozen were purchased by men who have treated them fairly. On exposing these animals, it was found that most of them contracted the disease naturally or suffered from relapse, but with ordinary care and nursing recovered, and have since resisted the disease during one of the worst seasons on record. The only explanation that can be offered is the well-known observation by Dutchmen, confirmed by Sir Arnold Theiler's work that the strains of virus differ in different districts, and that a horse "salted" in one district may contract the disease in another. This difficulty cannot be overcome until a more exact knowledge of the virus of horse-sickness can be obtained by patient research and costly experiment.

Trypanosomiasis.—Recently a very heavy infection has occurred amongst trek oxen working in the "fly" area in the Hartley district. Some 30 animals have been treated with very favourable results, the trypano some disappearing after the first injection and not re-appearing, the animals rapidly improving in condition. It is too early to announce complete recovery, but the fact that these favourable results have been obtained in spite of the heavy rains which have prevailed throughout the period of treatment leads one to hope for ultimate success. It is to be regretted that the same treatment cannot be applied to pigs, a number of which are infected on a farm near Hartley, but experiments are being conducted with a view to the discovery of a modification applicable to these animals. The investigations commenced in 1912 in connection with the trypanosomiasis of man and animals in the Sebungwe district were continued at the commencement of the present year. The resemblance of the parasite met with in man, waterbuck, dogs, and goats in the infected area to that known as *T. rhodesiense* was pointed out. Early in March two rabbits containing a strain of trypanosomiasis, originating from a natural case of nagana in a mule from Somkele, Zululand, were kindly forwarded to this laboratory by Mr. Wm. Robertson, Acting Director of the Government Veterinary Bacteriological Laboratory, Pretoria. Two days after the arrival of these animals, it was remarked that in many of the parasites the nucleus was placed in the posterior position held to be characteristic of *T. rhodesiense*. This was pointed out to Dr. Robertson, and about the same time Surgeon-General Sir David Bruce, working with this strain, drew attention to the same characteristic. As the result of these and similar observations, it is now thought that the so-called *T. rhodesiense* is nothing more nor less than a strain of *T. brucei*, possibly modified by transmission and other circumstances, and the statistics of the Medical Department show that the infection of man is by no means as common as the deductions of Kinghorn and Yorke would lead one to expect. A sheep found in a kraal in the Mafungabusi district was forwarded by Dr. Stohr to this laboratory, and was found to harbour in its blood a trypanosome which has now been recognised by Bruce as that described as *T. Capræ*. A similar parasite has recently been found in an ox in the Gatooma district.

Accommodation.—The accommodation at present available is inadequate. The Letombo camp having been handed over to the Native Labour bureau, no accommodation has been provided for cattle under inoculation, which have therefore to be stabled at the laboratory. When accommodation has been provided for standard animals (used for the supply of serum, virus, etc.), native attendants and stores, there only remains room for ten head of cattle. It is manifestly undesirable to carry on experimental work on infective diseases in close proximity to valuable animals about to be distributed throughout the country. Under existing conditions, isolation being impossible, research work has to be abandoned. The laboratory consists of one large room and a second room originally intended for small animals. The latter is now used as a private office and library. The larger room has to serve for laboratory, office, and store room for glassware, apparatus, drugs, serums, pathological specimens and clerical materials. Work requiring proper sterile precautions is impossible, and clerical work is performed under dangerous conditions. No provision is made for the destruction of carcases or infective material, and a stable has to be set aside for the housing of the native staff—facts which have been frequently commented upon by the municipal authorities and police.

Vote.—The amount allocated to the laboratory for the year having been reduced to £350, most of which was devoted to the expenses in connection with the inoculation of imported stock and general upkeep of the station, little or nothing remained for research work.

Ll. E. W. Bevan,
Veterinary Bacteriologist.

On the Training of Veterinary Surgeons for Public Duties in Connection with the Prevention of Disease with Reference to the Institution of a Diploma in Veterinary State Medicine.

Prof. Sheridan Delepine, M.B., C.M., M.Sc., Director of the Public Health Laboratory, University of Manchester, has contributed the following to the September issue of *Public Health*, and it has been reprinted in pamphlet form. The value of the initial movement to the veterinary profession was unquestionably great, and has been enhanced by the contemporary enormous withdrawal of horses from use as tractors.

"It has long been known to medical and veterinary pathologists that the control and prevention of infectious diseases must be based upon an exact knowledge of the etiology of these diseases, of the life history of the causal animal or vegetable parasites, and of the conditions favouring the transmission of disease and the occurrence of epidemics and of epizootics. It is now generally accepted that preventive medicine even in its most administrative aspect is based upon pathology, epidemiology, and epizootiology.

The importance of the diseases of animals that are communicable to man was early recognised by public health administrators; but while the public health service was in its infancy no adequate provision could be made for the administrative control of animal diseases. Later, it became obvious that the duties of medical officers of health did not allow them the time necessary to make themselves familiar with all the diseases of animals that are liable to affect man, and that sanitary inspectors from want of previous training could not be entrusted with this part of the work. It was then realised that the co-operation of the veterinary profession was not only desirable but necessary. This appeared to us in Manchester so clearly indicated, that when in 1892 we were engaged in re-organising the courses for the Diploma in Public Health, I suggested that provision should also be made for instruction in veterinary preventive medicine. This, in my opinion, was needed not only for the purpose of improving the means available for the prevention of human diseases, but also for the purpose of helping agriculturists in their efforts to reduce the losses due to diseases to which live

OFFICERS, NON-COMMISSIONED OFFICERS AND MEN OF THE NORTH MIDLAND DIVISIONAL VETERINARY HOSPITAL, TERRITORIAL FORCE.

stock are liable. The knowledge which had already been gained regarding the causes of many animal diseases seemed to be sufficiently advanced to justify the establishment of a public veterinary service, somewhat on the lines of the public health service. The necessity of special training had been recognised in the report of the Departmental Committee on Pleuro-pnemonia and Tuberculosis in 1888 (part 1, page 13, paragraphs 55 and 56).

There were, however, differences of opinion upon the subject, and several of the leading members of the veterinary profession whom I consulted showed themselves adverse to the institution of post-graduate courses such as were contemplated. They urged that the veterinary students who had taken a full course of instruction for the membership of the Royal College of Veterinary Surgeons and obtained the ordinary diploma of the College were competent to undertake any of the duties connected with the public services. But in the course of the subsequent ten years various sanitary authorities realised the importance of having the assistance of specially trained veterinary officers, more specially in connection with meat inspection and the control of bovine tuberculosis. The same need was felt in agricultural circles. After careful inquiries and consultations, the University of Manchester decided to institute a post-graduate course in veterinary hygiene and preventive medicine, and to grant a diploma to members of the Royal College of Veterinary Surgeons who had attended satisfactorily the course prescribed by the University, and passed an examination corresponding in scope to the examination for the Diploma in Public Health. This scheme was realised in 1902.

Considering the fact that there was not at the time outside the Board of Agriculture any regular opening for specially trained veterinary officers except in connection with the Public Health Departments of counties and county boroughs, it was thought expedient to direct the teaching and examination towards those branches of Veterinary State Medicine that had a special bearing upon the prevention and control of the diseases of animals that are communicable to man. It was realised, however, that when other branches of a State veterinary service were organised certain additions would have to be made to the curriculum, so as to meet special requirements. It was not thought desirable to widen the scope of the course to such an extent as to make it impossible for the students to obtain a *practical mastery* of the subjects selected for special study.

After careful inquiry, it was ascertained that under the prevailing conditions it would be useless to offer a course of more than nine months' duration (that is, a whole academic year), because there would be extremely few, if any, veterinary graduates who would be willing to incur the loss of time and money, which a course extending over more than one year would involve.

In the selection of subjects of study we were guided by the belief that what the average post-graduate student wanted most was to obtain a practical knowledge of (1) the scientific methods which are constantly needed in the investigation of the causes and phenomena of disease; (2) the practical application of the knowledge gained by these methods to the administrative control of disease.

With regard to students showing special aptitude for research, and desiring to do some special work, it was thought that the best way to meet their case was to offer them opportunities to carry out suitable investigations in the laboratory under the supervision of the staff. But the main object was to give the men attending the University post-graduate course a sound, practical knowledge of scientific and administrative methods which had proved of value or might become useful in the investigation and prevention of disease. This appeared to be the best way to prepare the men for the efficient discharge of the important and responsible duties that might be entrusted to them by public authorities.

In order to carry out this scheme, it was found necessary that post-graduate students should obtain their instruction not only from pathologists, bacteriologists, zoologists, chemists, and other laboratory workers, but also from veterinary officials engaged in administrative work in connection with the inspection of farms, markets, abattoirs, etc. The subjects which appeared most suitable for teaching of a practical character in the laboratory were comparative pathology, with special reference to the causes and mode of spread of disease, the life history of the most important animal and vegetable parasites, the influence of various factors upon the occurrence and distribution of disease, and other subjects generally included in epidemiology or epizootiology. It was also thought desirable to give a place in the curriculum to practical chemistry, more specially with reference to the analysis of water, air, soil, and various dairy produce and food-stuffs, not with the object of making the students competent analytical chemists, but rather for the purpose of making them familiar with the meaning of analytical results, and also in order to complete a part of their scientific training which is often neglected at an early stage.

The scope of the instruction which it has been found possible to impart with some success during the last 12 years, is indicated in a general way in the regulations of the University of Manchester as regards the subjects of the examination for the diploma in veterinary State medicine. (The examination lasts four days, three of which is devoted to practical work and oral examinations).

(1) Practical chemistry, with special reference to veterinary hygiene.

(*a*) Methods of qualitative and quantitative analysis, with special reference to the examination of air, water, soil, and foods.

(*b*) The principles of warming and ventilation.

(*c*) Meteorological instruments and their use.

(2) Practical pathology, parasitology, and microscopy.

(*a*) Practical bacteriology, including bacteriological analysis of air, water, foods, and soils. Disinfection and sterilisation. Isolation and identification of pathogenic bacteria.

(*b*) Recognition of animal parasites. Life history of some of the most important animal parasites.

(*c*) Morbid anatomy of lesions associated with parasitic diseases (characters of diseased meat).

(*d*) Microscopical impurities of foods, air, and water.

(3) Comparative pathology of domesticated animals.

Pathology of epizootic diseases and of diseases due to unwholesome food, air, water. Influence of housing, climate, season, soil. Geographical distribution of diseases. Artificial and natural immunity. Effects of heredity on liability to disease.

(4) Veterinary hygiene.

Construction of stables, byres, pigsties, kennels, etc. Hospitals, abattoirs. Methods of ventilation, drainage, disposal of refuse. Foods. Water supply. Methods of transport.

(5) Sanitary law and administration.

Control of contagious diseases under the provisions of the Contagious Diseases of Animals Act, Statutes and bye-laws.

(6) Inspection of meat, dairies, cowsheds, farms, etc. Sanitary reporting.

In the conduct of the examination the University has had the assistance of the highest authorities in the kingdom, viz., of Sir John M'Fadyean and Sir Stewart Stockman.

That the institution of a post-graduate course in

veterinary state medicine has met a want is shown by the fact that a number of men of high standing have taken advantage of the opportunities offered by the University, but the most convincing proof of the need which veterinary surgeons wishing to enter into public service have of special post-graduate instruction has been given by the Royal College of Veterinary Surgeons, who have quite recently instituted a diploma in veterinary State medicine on lines similar to those which have been described above.

The Heather Beetle, and how to Exterminate it.

In September, 1912, a meeting of proprietors, tenants, and others was held at Ayr for the purpose of ascertaining the extent of the damage done by the heather beetle, and how best to combat the injury done by this pest. A committee was formed, consisting of the Marquis of Ailsa, Mr. J. G. A. Baird, Mr. James Clark, Mr. John Craig, Lord Dalrymple, Lord Dunglass, Mr. A. Fairbain, Mr. J. B. Fergusson, and Mr. J. E. Shaw. The committee confined their inquiries. in the first instance, to the county of Ayr, and in November issued a schedule of questions on various points relating to the subject of their inquiry. Over sixty answers were received, giving much information of value. Without going into detail, it may be stated that the answers showed the damage to heather was widespread, and that, although it had been known of for a long time, it had only become serious in recent years. Little investigation had been made into the cause, and as a rule no attempt had been made to check the evil, largely, perhaps, because frost was assumed to be the direct cause.

The committee invited Mr. Percy Grimshaw, F.E.S., the well known entomologist of the Royal Scottish Museum, Edinburgh, to visit Ayrshire to complete his study of the habits and life history of the heather beetle.

In his article, which appeared in the *Field*, Mr. Grimshaw writes:—

"At the outset I desire to emphasise the fact, or what I now regard as a fact, that practically all cases of diseased heather are due, *not to the effect of frost*, but to the ravages of the insect now commonly called on this account the heather beetle (*Lochmaea suturalis*). For my own part I find it difficult to believe that a thoroughly hardy plant like our native heather can be seriously injured by adverse climatic conditions. Moreover, the appearance of the moors is decidedly against the 'frost' theory, for the injured plants are in patches of varying size, sharply defined, and sometimes only separated from vigorous and healthy heather by a drain less than a yard in width. How frost could damage (and even kill) the plants on one side of the drain and not hurt others only a yard or two away is to me incomprehensible. On the other hand, a very characteristic feature in the affected areas strongly supports the 'beetle' theory, apart from proofs of a more definite nature. The condition alluded to is as follows: A patch of varying size, from a few inches across to many yards in diameter, of a more or less circular form or with rounded outlines, is seen to be green and healthy in its central portion, but surrounded by a fringe, only a few inches in width in the larger patches, of brown, withered appearance, quite unmistakable and easily recognised after a little experience. When such a patch is examined it will be noticed that the withered portions almost invariably overhang wet ground where there is a plentiful growth of sphagnum moss. *Herein lies the whole secret!* We have discovered that the eggs of the beetle are laid among the brownish lower stems of the sphagnum, where there is an abundance of moisture. This discovery is somewhat surprising but it was amply proved by careful examination of the ground, and we were able to predict with confidence the finding of eggs in almost every patch of sphagnum overhung by brown, withered heather, while diligent search among dry heather gave equally convincing negative results."

As regards remedies, Mr. Grimshaw favours draining, but at the same time recognises that such a remedy is an expensive one. Burning, he considers, must be done during the months of July, August, or September, before it will be effective, and at present such is not allowed by law. Burning is permitted from November to April, but at that period the beetles are under the soil.

At the best the beetle must seriously diminish the food supply, as the heather, for a time at any rate, does not flower, and therefore does not give any seed, the chief winter food of the grouse. At the worst the heather is entirely destroyed. It therefore behoves all interested in grouse and heather culture to seriously wage war against the beetle. Blackgame, pheasants, and starlings eat the grub freely.

The Veterinary Hospital, the personnal of which is shown in our illustration, is one of the first, if not the first veterinary unit to be formed in the Territorial Force. It came into existence on 6th August, 1914.

The Swine Fever Regulations.

A letter from the President of the Board of Agriculture, states that for the present the experimental procedure in force in the swine fever special procedure area is suspended. As a further matter of public policy, only affected or ailing swine in Great Britain will be slaughtered, swine in contact being isolated, except where effective isolation is impossible.

Diseased Meat Prosecution at Newcastle.

At Newcastle Police Court on Sept. 25, Charles Stephenson, of Town Farm, Heddon-on-the-Wall, was charged with having sent in the city and deposited for sale meat which was diseased and unfit for food. Haswell Stephenson, a butcher, of Cramlington, was charged with having aided and abetted his brother Charles in the offence.

Mr. V. B. Bateson, deputy Town Clerk, prosecuted, and Mr. B. C. K Snagg defended.

Inspector Anderson said he saw on Aug. 20, hanging up among other cases offer for sale in Messrs. Tindall's meat sheds, Scotswood Road, four quarters of beef which had obviously been trimmed for the purposes of sale.

Chief Inspector T. Parker, F.R.C.V.S., found Charles Stephenson in charge of the carcase, and on examination found that one quarter had been stripped and all quarters diseased. When asked where the liver, lungs, and other internal organs were, defendant said that he had eaten part of the liver; the lungs were buried, but were all right. Further, he stated he had killed the cow because she had got a leg over a post, and had nearly strangled herself. Inspector Parker proceeded to Heddon where he had the manure pit dug up and found all the internal organs. Both skirts and liver were diseased, and the lungs were both heavily affected with miliary tuberculosis. The organs were brought back to the city. The same evening Inspector Parker called upon Haswell Stephenson who lived 12 miles from Heddon and who informed him that the cow was slaughtered because she was going back and had found her standing in byre in ordinary way. The next morning the whole lot were shown to a Justice of the Peace who ordered their destruction.

The case against the brother was that he had slaughtered the animal, and when he was seen by the inspector and asked if he had noticed the condition of the heart, lungs, and liver, he said "I will leave that over."

Inspector Parker bore out this statement, and said the carcase was hanging in the ordinary place in Messrs. Tindell's shed. The portions found buried at the farm were marketable articles in an ordinary animal.

In reply to Mr. Snagg, witness stated that notices were displayed in Messrs. Tindall's shed stating that all carcases were examined by the inspector before sale.

For the defence, Mr. Snagg said the defendants were not aware of the condition of the carcase. The animal was killed because of an accident, and it was slaughtered by Haswell Stephenson by candle-light. The entrails were buried, and on the following day Charles Stephenson took the carcase to Newcastle and told Mr. Tindall's man that he did not know anything about its condition. The carcase was hung where all carcases were put for the purpose of being examined before sale. All carcases in Mr. Tindall's shed were examined by the inspector before being sold. Mr. Snagg argued that there was no deposit for sale.

Charles Stephenson said this was the first time he had sold a carcase. He had never seen an animal suffering from tuberculosis and would not know the disease if he saw it. He admitted having said that he had eaten the liver, but he had no intention of deceiving the inspector.

In cross-examination, defendant said he thought it was good meat, but to make sure he told Mr. Tindall's man to have it examined. Asked why he had buried the internal organs, he said it was done on the impluse of the moment, because his brother said the liver was hard.

Alfred Wright, an assistant with Mr. Tindall, said the carcase was hung where meat was put for sale, but it was waiting to be examined by the inspector.

Mr. Adam Tindall said this was the first transaction he had ever had with the defendant. It was the rule of his mart that all carcases should be examined before being sold. Stephenson was a novice, and knew nothing about tuberculosis.

The magistrates fined Charles Stephenson £5 and costs and Haswell Stephenson £2 and costs.—*The Evening Chronicle* (Newcastle-on-Tyne).

ROYAL VETERINARY COLLEGE, LONDON.

List of Prizes. Session 1914-1915.

Coleman Prizes.—Silver medal: Mr. H. H. Curson; Bronze medal: Mr. J. F. D. Tutt; Certificate of merit: Mr. G. H. Melck.

Centenary Prizes.—Class A: Mr. J. W. Knowles; Class B: Mr. S. C. J. Bennett; Class C: Mr. T. J. Bosworth; Class D: Mr. J. F. D. Tutt.

Royal Agricultural Society's Medals—Silver medal: Mr. H. H. Curson; Bronze medal: Mr. G. H. Melck.

Ralli Prizes in Practical Surgery.—1st Prize: Mr. C. H. S. Townsend: 2nd Prize: Mr. R. H. Stalker; 3rd Prize: Mr. F. H. Stainton.

Clinical Prizes.—Class A.—1st Prize: Mr. E. J. Gill; 2nd Prize: Mr. S. V. Golledge; 3rd Prize: Mr. K. A. Miles.

Class B.—1st Prize: Mr. R. Catmur; 2nd Prize: Mr. G. F. Watkins; 3rd Prize: Mr. S. C. J. Bennett.

Class C.—1st Prize: Mr. W. A. Macgregor; 2nd Prize: Mr. W. Shipley; 3rd Prize: Mr. R. H. Penhale.

Class D.—1st Prize: Mr. C. H. S. Townsend; 2nd Prize: Mr. R. M. Bamford; 3rd Prize: Mr. H. H. Curson.

Class Prizes.—Class D.—Veterinary Medicine—1st Prize: Mr. D. Blyth; 2nd Prize: Mr. H. H. Curson; Surgery: 1st Prize: Mr. J. F. D. Tutt; 2nd Prize: Mr. H. H. Curson.

Class C.—Pathology—1st Prize: Mr. T. J. Bosworth; 2nd Prize: Mr. R. H. Penhale; Hygiene: 1st Prize: Mr. R. H. Penhale; 2nd Prize: Mr. T. J. Bosworth; Materia Medica—1st Prize: Mr. T. J. Bosworth; 2nd Prize: Mr. P. R. Turner.

Class B.—Anatomy—1st Prize: Mr. S. C. J. Bennett; 2nd Prize: Mr. A. Carter; Physiology—1st Prize: Mr. A. Carter; 2nd Prize: Mr. S. C. J. Bennett; Histology—1st Prize: Mr. S. C. J. Bennett; 2nd Prize: Mr. R. Catmur.

Class A.—Chemistry and Toxicology—1st Prize: Mr. F. C. Scott; 2nd Prize: Mr. T. J. Lewis; Practical Chemistry—1st Prize: Mr. P. L. Pugh; 2nd Prize: Mr. C. S. Northcott; Biology—1st Prize: Mr. J. W. Knowles; 2nd Prize: Mr. F. C. Scott; Minor Anatomy—1st Prize: Mr. T. J. Lewis; 2nd Prize: Mr. J. W. Knowles.

National Relief Fund.

Buckingham Palace,
Oct. 5th, 1914.

On the 6th August I appealed to the Nation to assist me in founding a National Fund to prevent and alleviate military and civil distress arising in consequence of the War. To-day, after the lapse of exactly two months, I am happy to say that the Fund has reached the splendid total of three million pounds. I wish to take this opportunity of thanking once more the many thousands of generous subscribers who have helped me to achieve this grand result.

I have delegated the responsibility of administering the Fund to the Executive Committee which I have appointed on the advice of the Prime Minister, and I count upon the Committee to see that assistance in emergency cases is adequate, and given with as little delay as circumstances permit. I trust that the portion of the Fund which is to be applied in relief of civil distress may, as far as possible, flow into productive channels such as assisting schemes for male and female employment and perhaps industrial training; for it is as repugnant to me as it must be to the recipients that assistance should be distributed only in the form of doles. What men most want is work, and what the young people need is training.

The sum which has already been raised is magnificent and I am confident that the generous British public will continue to do their utmost to alleviate the distress which war inevitably brings in its train.

EDWARD.

OBITUARY.

C. W. Stanley, M.R.C.V.S., Melton Mowbray.
Graduated, Lond: July, 1896.

Death occurred on Sept. 24th at the age of 42 years.

TENTH INTERNATIONAL VETERINARY CONGRESS, 1914.

A Correction.

Dear Sir,

I find there is an omission in the list of donors in *The Record* of Sept. 26th, viz., Veterinary Department British East Africa per R. J. Stordy, Esq., should read £18 10s. paid as well as promised.—Yours truly,

Frank W. Garnett.

Oct. 1.

ARMY VETERINARY SERVICE

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Oct. 2.

REGULAR FORCES. ARMY VETERINARY CORPS.

The following to be temporary Lieuts. :—

J. N. Cooper, P. A. Wilks, D. Hannay. Dated Sept. 2
E. A. Wilshaw. Dated Sept. 3.
J. W. Reynolds Dated Sept. 4.
G. T. F. Budge, J. Hill, A. C. Smart, F. S. Stanley, C. W. Makinson. Dated Sept. 5.
T. C. Howatson, J. Pollard, R. C. Allinson. Dated Sept. 7.
J. Bradley, J. B. Walker. Dated Sept. 8.
A. F. Dykes. Sept. 9.
A. O'Neill. Dated Sept. 10.
R. S. Collihole, J. Godber, J. E. Young. Dated Sept. 12.
R. J. Collings, T. M. Doyle. Dated Sept. 15.
J. P. Dunphy, R. P. Johns, A. Jackson. Dated Sept. 16.
C. T. Bray. Dated Sept. 18.
T. Hogg. Dated Sept. 20.
F. B. Barling Dated Sept. 21.

TERRITORIAL FORCE. ARMY VETERINARY CORPS

C. Holland to be Lieut. Dated Oct. 3.

Oct. 5.

REGULAR FORCES. ARMY VETERINARY CORPS.

The following to be temporary Lieuts. :—

C. M. Barton. Dated Sept. 21.
F. O. Maynard. Dated Sept. 25.
F. C. Gillard, J. W. F. Brittlebank. Dated Sept. 24.
R. J. Little. Dated Sept. 23.
O. G. Hills. Dated Sept. 22.
J. Pugh. Dated Sept. 26.
H. J. Allen. Dated Sept. 23.
J. M. Smith. Dated Sept. 25.
W. Scott. Dated Sept. 6.

Oct. 6.

Special Reserve of Officers.

ARMY VETERINARY CORPS.

J. J. Dunlop to be Lieut. (on probation). Dated Sept. 10.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Lieut. C. Drabble to be Capt. Dated Oct. 7.
J. F. Taylor to be Lieut. Dated Oct. 7.

Oct. 7.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

The date of appointment of Lieut. A. J. Beckett is Aug. 31, and not as announced in the *London Gazette* of Sept. 18.

Mr. J. Kerr Calderwood, M.R.C.V.S. left Clitheroe on Oct. 1 to join the Lancashire Hussars (Yeomanry) at present in training at Knowsley Park, as their Veterinary Officer.

DISEASES OF ANIMALS ACTS 1894 TO 1911, SUMMARY OF RETURNS.

Period.		Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange.			Swine Fever.	
		Outbreaks (a)	Animals.	Outbreaks (a	Animals.	Outbreaks (b)	Animals.	Outbreaks (b)	Animals.	Sheep Scab. (b)	Outbreaks (a)	Slaughtered. *
GT. BRITAIN. Week ended Oct. 3		11	11			1	1				115	692
Corresponding week in	1913 ...	9	11			1	1	17	22	2	36	357
	1912 ...	10	10		2	2	4	19	25	3	26	409
	1911 ...	19	32	8	25	3	8			2	51	685
Total for 40 weeks, 1914		568	623	22	108	83	255	1547	2682	155	3272	31760
Corresponding period in	1913 ...	420	464			122	239	2016	4021	136	1904	25344
	1912 ...	604	685	81	635	141	260	2434	5214	180	2371	31406
	1911 ...	667	835	17	466	156	376			313	1972	23032

(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked: London 1.

Board of Agriculture and Fisheries, Oct. 6, 1914

IRELAND. Week ended Oct. 3	...	...	...	...	...	...	Outbreaks 1	2	2	3
Corresponding Week in 1913 ...	...	...	...	...	...	...	3	3	1	1
1912 ...	...	...	1	1	...	...	2	4	4	15
1911 ...	...	...	...	...	...	...	...	4	...	47
Total for 40 weeks, 1914 ...	1	1	76	955	...	...	68	409	163	840
Corresponding period in 1913 ...	...	...	...	...	...	...	105	397	117	542
1912 ...	3	3	30	264	...	...	55	270	190	1532
1911 ...	7	14	...	...	2	3	52	269	104	1812

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Oct. 5, 1914

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection